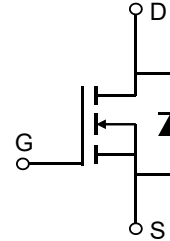


Description

Features

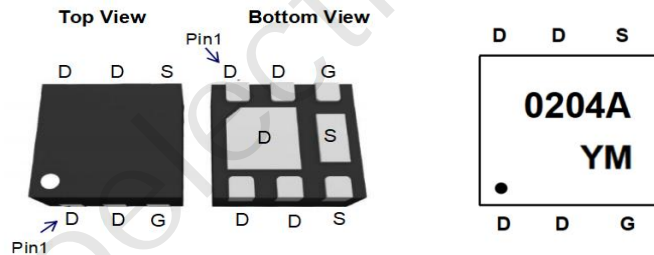
- 20V, 25A
 $R_{DS(ON)}$ Typ = 6.3mΩ @ $V_{GS} = 4.5V$
 $R_{DS(ON)}$ Typ = 8.0mΩ @ $V_{GS} = 2.5V$
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- Lead Free
- 100% ΔV_d s TESTED!



Schematic Diagram

Application

- Load Switch
- PWM Application
- Power Management



Marking and Pin Assignment

Package Marking and Ordering Information

Device	Marking	Package	Outline	Reel Size	Reel (pcs)	Per Carton (pcs)
CRMVTU0204A	0204A	DFN2020-6L	TAPING	7"	3000	120000

Absolute Maximum Ratings (@ $T_J = 25^\circ C$ unless otherwise specified)

Symbol	Parameter	Value	Units	
V _{DS}	Drain-to-Source Voltage	20	V	
V _{GS}	Gate-to-Source Voltage	±12	V	
I _D	Continuous Drain Current	T _C = 25°C	25	A
		T _C = 100°C	15	A
I _{DM}	Pulsed Drain Current ⁽¹⁾	100	A	
P _D	Power Dissipation	T _C = 25°C	7.35	W
R _{θJC}	Thermal Resistance, Junction to Case	17	°C/W	
T _J , T _{STG}	Junction & Storage Temperature Range	-55 to 150	°C	

Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	I _D = 250μA, V _{GS} = 0V	20	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 20V, V _{GS} = 0V	-	-	1.0	μA
I _{GSS}	Gate-Body Leakage Current	V _{DS} = 0V, V _{GS} = ±12V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	0.4	0.7	1	V
R _{DS(ON)}	Static Drain-Source ON-Resistance ⁽²⁾	V _{GS} = 4.5V, I _D = 5A	-	6.3	8.2	mΩ
		V _{GS} = 2.5V, I _D = 3A	-	8	10.4	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} = 0V, V _{DS} = 10V, f = 1MHz	-	1945	-	pF
C _{oss}	Output Capacitance		-	248	-	pF
C _{rss}	Reverse Transfer Capacitance		-	218	-	pF
Q _g	Total Gate Charge	V _{GS} = 0 to 4.5V V _{DS} = 10V, I _D = 20A	-	23	-	nC
Q _{gs}	Gate Source Charge		-	4	-	nC
Q _{gd}	Gate Drain("Miller") Charge		-	7	-	nC
Switching Characteristics						
t _{d(on)}	Turn-On DelayTime	V _{GS} = 4.5V, V _{DD} = 10V I _D = 20A, R _{GEN} = 3Ω	-	12	-	ns
t _r	Turn-On Rise Time		-	33	-	ns
t _{d(off)}	Turn-Off DelayTime		-	48	-	ns
t _f	Turn-Off Fall Time		-	95	-	ns
Drain-Source Diode Characteristics and Max Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	25	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	100	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} = 0V, I _S = 5A	-	-	1.2	V
trr	Body Diode Reverse Recovery Time	I _F = 20A, di/dt = 100A/us	-	11	-	ns
Qrr	Body Diode Reverse Recovery Charge		-	2.5	-	nC

Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.

2. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 0.5\%$.

Test Circuit

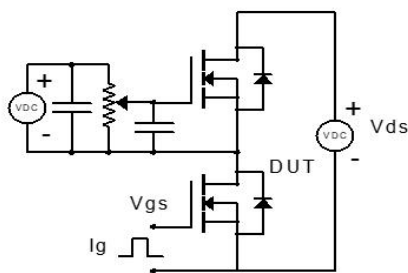


Figure 1: Gate Charge Test Circuit & Waveform

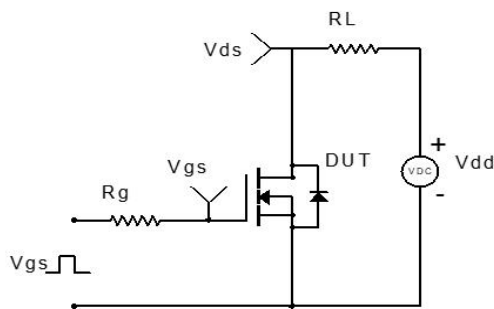


Figure 2: Resistive Switching Test Circuit & Waveform

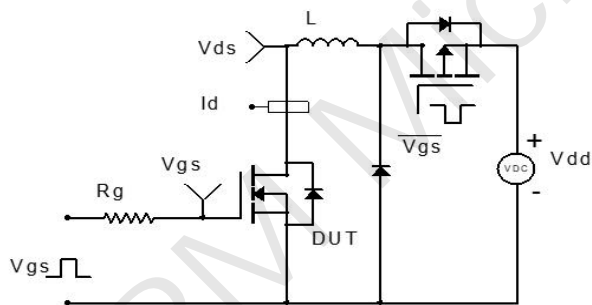


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

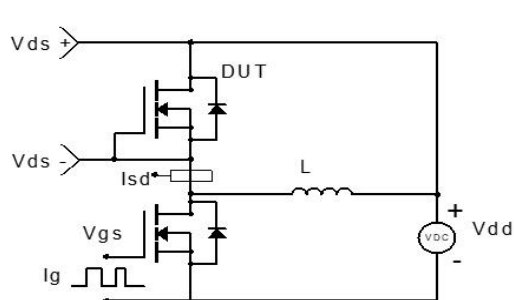
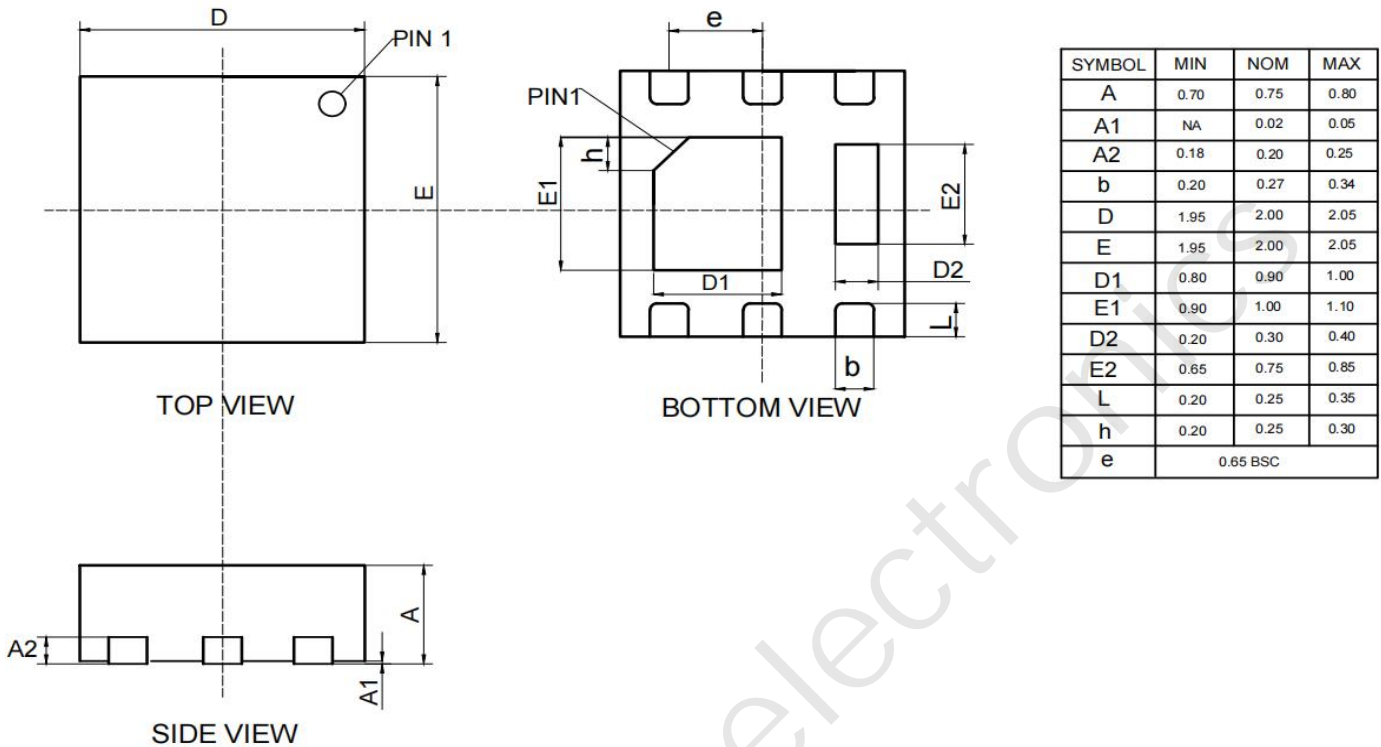


Figure 4: Diode Recovery Test Circuit & Waveform

Package Mechanical Data(DFN2020-6L)



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